Connection of SIMATIC Energy Suite to SIMATIC Energy Manager PRO and subsequent Reporting

SIMATIC Energy Manager PRO V7.0, SIMATIC Energy Suite V14 SP1

Warranty and Liability

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1 Task

Introduction

In many companies, energy costs constitute a great share of the total costs. If the internal energy flows cannot be acquired, only the total energy consumption and the total costs are known. In this case the plant is like a black box. Due to the following developments, the energy management is becoming an increasingly central topic in production:

- Increasing energy costs
- Increasing significance of environmentally-friendly production processes
- Legal measures

With the SIMATIC Energy Suite you can acquire, archive and visualize the energy consumption of your production plant. In order to be able to analyze this archived data and to derive optimization potentials, you can couple the SIMATIC Energy Suite data to the SIMATIC Energy Manager PRO (abbr.: EnMPRO).

Overview of the automation task

The figure below provides an overview of the automation task.

Figure 1-1

Description of the automation task

The application example shows you how to couple your archived energy data of your production plant to an Energy Manager PRO system.
2 Solution

2.1 Overview

Schematic layout

The figure below shows a schematic overview of the most important components of the solution:

Figure 2-1

Advantages

The solution presented here, offers you the following advantages

- Reducing the engineering effort
- Time and cost savings
- Expandability
- Further use of Energy Suite data for analyzes purposes

Topics not covered by this application

This application does not include a description of:

- Basic programming of controllers and operator panels
- Creation of an energy program with SIMATIC Energy Suite
- Creation of a visualization of the energy program

Assumed knowledge

Basic knowledge of

- the interaction of controller and HMI.
2 Solution

2.2 Hardware and software components

- the configuration of a controller as well as an HMI.
- the configuration of SIMATIC Energy Suite

2.2 Hardware and software components

2.2.1 Validity

This application is valid for
- Energy Manager PRO V7.0
- STEP 7 Professional V14 SP1
- WinCC Professional V14 SP1
- CPU S7-1500 as of firmware V2.0

2.2.2 Components used

The application was created using the following components:

Hardware components

<table>
<thead>
<tr>
<th>Component</th>
<th>Qty.</th>
<th>Article number</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU 1513-1 V2.0</td>
<td>1</td>
<td>6ES7513-1AL01-0AB0</td>
<td>Firmware V2.0 required. Alternatively, any other CPU from the S7-1500 product family that has firmware V2.0 (apart from S7-1500S) can be used.</td>
</tr>
<tr>
<td>SIMATIC Memory Card (24MB)</td>
<td>1</td>
<td>6ES7954-8FL02-0AA0</td>
<td>Alternatively, you can also use SIMATIC memory cards with other storage sizes</td>
</tr>
</tbody>
</table>

Software components

<table>
<thead>
<tr>
<th>Component</th>
<th>Qty.</th>
<th>Article number</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIMATIC STEP 7 Professional V14 SP1</td>
<td>1</td>
<td>6ES7822-1A.04-0YA5</td>
<td>-</td>
</tr>
<tr>
<td>WinCC Professional V14 SP1</td>
<td>1</td>
<td>6AV2103-0XA04-0A.5</td>
<td>-</td>
</tr>
<tr>
<td>WinCC Runtime Professional V14 SP1</td>
<td>1</td>
<td>6AV2103-0XA04-0A.5</td>
<td>-</td>
</tr>
<tr>
<td>SIMATIC Energy Suite</td>
<td>1</td>
<td>6AV2108-0AA04-0A.5</td>
<td>-</td>
</tr>
<tr>
<td>SIMATIC Energy Manager PRO V7.0</td>
<td>1</td>
<td>6AV6372-2DF07-0AX0</td>
<td>-</td>
</tr>
</tbody>
</table>
2 Solution

2.2 Hardware and software components

Example files and projects

The following list includes all files and projects that are used in this example.

Table 2-3

<table>
<thead>
<tr>
<th>Component</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report template</td>
<td>Available in the entry for free-of-charge</td>
</tr>
<tr>
<td></td>
<td>download</td>
</tr>
<tr>
<td>XML for report import</td>
<td>Available in the entry for free-of-charge</td>
</tr>
<tr>
<td></td>
<td>download</td>
</tr>
</tbody>
</table>
3 Basics

3.1 General information

SIMATIC Energy Manager PRO is a software for energy data analysis on the basis of the operating data of a plant.

SIMATIC Energy Manager PRO provides the basis for economic energy plant management in order to reduce the energy costs and to increase energy efficiency.

Advantages

This has to the following advantages:

- Creates company-wide transparency through consistent energy and material accounting for the power generation and consumption plants
- Enables originator-based energy cost allocation and creates a transition to the accounting system (for example, SAP)
- Forms characteristic values which enable founded statements on the increase of the efficiency of power generation plants and consumers
- Provides planning reliability through production-related load and demand prognosis
- Fulfills the legal requirements for monitoring and reporting of greenhouse gas emissions (CO₂ emissions)
- Relief through the automatic operation of internal and external energy reporting system.

Note

For further information, please refer to the manual "SIMATIC Energy Manager PRO V7.0 – Operation" in the chapter "What is Energy Manager PRO capable of doing in the field of energy management?:"


3.2 Fields of application

In the automation pyramid SIMATIC Energy Manager PRO is located on the management level.

Figure 3-1
3.3 Configuration

Energy data can be acquired and visualized in the field and supervisory control level using SIMATIC Energy Suite. The energy data of SIMATIC Energy Suite can be imported using Energy Manager PRO and analyzed according to very different criteria, this makes it possible to precisely discover the optimization potentials in a plant.

3.3.1 Components

Energy Manager PRO always consists of 5 main components:
- Energy Manager PRO Server
- Energy Manager PRO Client
- Energy Manager PRO Acquisition
- Energy Manager PRO Web Server
- Energy Manager PRO Web Server

Figure 3-2

Note
For further information about the individual components and a detailed description, please refer to the manual "SIMATIC Energy Manager PRO V7.0 – Installation" in the chapter "Energy Manager PRO Components":

3 Basics

3.4 Functions

Energy Manager PRO Client
The Energy Manager PRO Client gives you the opportunity to access the data of Energy Manager PRO. Furthermore, you can create reports and calculate evaluations.
The Energy Manager PRO Client can therefore also be considered an energy component.

Energy Manager PRO Web
In contrast, Energy Manager PRO Web is a browser-protected user system. This is how you provide selected contents of the Energy Manager PRO Client to a defined user circle, using Energy Manager PRO Web.

Note
More information can also be found in the system manual of SIMATIC Energy Manager PRO V7:

3.3.2 Names
In order to be able to uniquely identify the objects in Energy Manager PRO, prefixes have been defined for the names.

Table 3-1

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>a_</td>
<td>Derived data point</td>
</tr>
<tr>
<td>d_</td>
<td>Data point</td>
</tr>
<tr>
<td>e_</td>
<td>Generic data point</td>
</tr>
<tr>
<td>k_</td>
<td>Constant</td>
</tr>
<tr>
<td>p_</td>
<td>Prototype</td>
</tr>
<tr>
<td>l_</td>
<td>Loop</td>
</tr>
<tr>
<td>t_</td>
<td>Parameter</td>
</tr>
<tr>
<td>m_</td>
<td>Measuring variable</td>
</tr>
</tbody>
</table>

3.4 Functions
This chapter describes the individual functions of Energy Manager PRO in summary. Detailed information on the individual functions can be found in the manual "SIMATIC Energy Manager PRO V7.0 - Operation":

3.4.1 Acquisition
SIMATIC Energy Manager PRO is able to read data via very different protocols, for example:
- WinCC
- S7 protocol
- Data import via FTP/sFTP or directly from the directory
- OPC DA/UA/HDA
- Energy Suite direct
3.4 Functions

3.4.2 Archiving

The acquired data can then be archived user-defined in different compression stages.
For example, you can archive 15min averages and daily averages of a data point in order to, for example, display this data in a daily or monthly report.

3.4.3 Calculating and evaluating

MEVA

The data points created can be offset against objects with the help of measurement variables (in the system and below referred to as "MEVA"). A formula for a calculation will be stored in MEVA and the data points required for the calculation will be interconnected with MEVA.
The result of the calculation can then be saved and archived in another data point.
3 Basics

3.4 Functions

Reports

On the basis of data reports can be created, for example, to display the monthly consumption of different media.
You can create a report template for the reports in Microsoft Excel and import them in the SIMATIC Energy Manager PRO. Subsequently you can create a report on the basis of the report template and automatically create it cyclically.

3.4.4 Visualization

Another important function of the Energy Manager PRO is the visualization of data on the integrated web pages. Here, you can easily analyze the data. In a dashboard you simply create widgets, select the required data points and have them displayed.

Widget-based web dashboard

Fully-flexible creation of web dashboards at runtime and intuitive use through widget-based concept

Figure 3-5

Statistics functions

Dynamic statistic functions enable flexible energy analysis in web dashboard and desktop chart.
3 Basics

3.4 Functions

Figure 3-6
3.5 Licensing

Basic package

The SIMATIC Energy Manager PRO is delivered as basic package, in this package you will find:

- 50 tags
- 1 Energy Manager PRO acquisition component
- 1 Energy Manager PRO Client
- 1 SIMATIC Energy Manager PRO Mobile
- SIMATIC Energy Manager PRO Web Server incl. 1 SIMATIC Energy Manager PRO Web Client
- Microsoft SQL Server 2014 database
- SIMATIC Energy Manager PRO Server

Tag Packages

If the tags of the basic package are not enough, you can expand them dynamically by tag packages. The following packages are available:

- 50 tags
- 100 tags
- 250 tags
- 500 tags
- 1,000 tags
- 5,000 tags
- 30,000 tags

Additional packages

Furthermore, the scope of function of the Energy Manager PRO can be expanded by additional packages. Available additional packages are:

- Energy Manager PRO Web Clients (3, 20 and 60)
- Energy Manager PRO Client
- Energy Manager PRO acquisition component
- Energy Manager PRO planning and prognosis

Note

The Energy Manager PRO licenses are managed via the Automation License Manager.
4 Configuration and Settings

4.1 Prerequisite

Energy Suite project

For you to be able to connect the Energy Suite data to Energy Manager PRO, it is assumed that you have already generated an energy program using the SIMATIC Energy Suite. Arching energy data has to be carried out using SIMATIC WinCC Runtime Professional.

Note

For more information, please refer to the "SIMATIC Energy Suite - Getting Started" application example

4.2 Installation

4.2.1 Installing OPC options

In order to be able to establish a communication connection between WinCC Runtime Professional and the acquisition component of SIMATIC Energy Manager PRO, the OPC options have to be installed in SIMATIC WinCC Runtime Professional.

The following instruction shows you what options have to be installed and how you can check this.

Table 3-2

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Start the WinCC Runtime Professional V14 SP1 Setup.</td>
</tr>
</tbody>
</table>
| 2. | Select the "Modify/Upgrade" option box in the "Configuration" installation step (1).  
| | Click on "Next" (2). |
4.2 Installation

3. Check whether the OPC options are installed and install them, if required.

4. Follow the further installation instructions.

4.2.2 Enabling Windows features

As preparation for the SIMATIC Energy Manager PRO installation it is necessary to enable special Windows features for the Internet information service. This service is required to be able to use the web functionality of SIMATIC Energy Manager PRO.

Table 4-3

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2. | • Navigate to "Programs" (1).  
    | • Click on "Turn Windows features on or off" (2). |
### 4.2 Installation

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Check in the Windows Features whether all options are enabled in &quot;Internet Information Services&quot; as shown in the following figure.</td>
</tr>
</tbody>
</table>

![Windows Features](image)

4. Confirm the selection with "OK" and close the control panel.
4.2 Installation

4.2.3 Installing SIMATIC Energy Manager PRO V7.0

The table below briefly describes the main steps for installing Energy Manager PRO V7.0, based on the component installation.

Table 3-4

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Start the SIMATIC Energy Manager PRO Setup and follow the installation instructions</td>
</tr>
</tbody>
</table>
| 2.  | • In the "Product type" installation step, select the "Component installation" option (1).  
• Click on "Next" (2). |
| 3.  | • Select the "Package-Setup" as "Install type" (1)  
• If necessary, change the "Destination folder" (2).  
• Click on "Next" (3). |

Note

For an extensive step-by-step instruction incl. screenshots for component installation or full installation, please refer to the manual "SIMATIC Energy Manager PRO V7.0 – Installation" in the chapter "Installing Energy Manager PRO":

## 4.2 Installation

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Select &quot;Program packages&quot; and click on &quot;Next&quot;</td>
</tr>
<tr>
<td>5.</td>
<td>Enter the host name of the application server in the &quot;Application server settings&quot;, if it differs from the selected one.</td>
</tr>
</tbody>
</table>
| 6.  | • Assign a password for the Energy Manager PRO Administrator and confirm it (1).  
• Afterwards select a Windows user, with which the Energy Manager PRO services are to be started and enter the password for this user (2). |

**Note**  
The user that is entered as "SIMATIC Energy Manager PRO Administrator" has to have administrator rights in Windows and his/her password must still be valid.
4 Configuration and Settings
4.3 Configuring acquisition component

4.3 Configuring acquisition component

In this chapter, you will learn how to create an acquisition component in data Energy Manager PRO Client and how to connect it with the acquisition server.

Note
An extensive description on the configuration of an acquisition component can be found in the "Energy Manager PRO V7.0 – Acquisition" manual in the chapter "Connecting acquisition component with server":


Table 3-5

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Open the Energy Manager PRO Client and log on with a valid user.</td>
</tr>
</tbody>
</table>
| 2.  | Creating the acquisition component  
  • Click on the "Acquisition" tab (1).  
  • Select "Automatic acquisition" (2).  
  • Assign a name for the component to be acquired (3).  
  • Select the host name (4).  
  • Confirm your entries using "OK" (5). |
| 3.  | Open an Internet Browser and go to the web page "http://[RECHNERNAME]/EnMPROAcquisition/Login.aspx". |
4.3 Configuring acquisition component

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Log on with a valid Windows user.</td>
</tr>
</tbody>
</table>

5. Connecting acquisition component with server
   - Start the wizard and follow the instructions (1).
   - Select the server and click on "Check Connection" (2).
   - Specify an authentication (Energy Manager PRO User) and click on "Login" (3).
   - Select the acquisition component created in item 2 and confirm your entry using "Save" (4).

You receive a confirmation that the wizard was successful.

6. Click on "Logout" in the navigation area.
4.4 Importing SIMATIC Energy Suite data

In order to exchange data between WinCC Runtime Professional and Energy Manager PRO, first of all, a connection between the two systems has to be created. The table below shows you what configuration steps are required for this.

Table 3-6

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1.  | **Starting wizard**  
    - Open the acquisition component by right-clicking it (1).  
    - Click on wizard (2). |
| 3.  | **Selecting Energy Suite**  
    - Select the "Energy Suite Import" item in the "Acquisition Wizard" (1).  
    - Click "Next" (2). |
4.4 Importing SIMATIC Energy Suite data

4. Defining channel
- Enter a name for the communication channel (1).
- If necessary, change the country for the acquisition hardware (2).
- When data is acquired, select the initial state "ACTIVE" (3).
- Click on "Next" (4).

5. Selecting the connection
- Enter a group name (1).
- If necessary, change the “Discover Url” and then click “Discover” (2). Pay attention to the port number in the Url.
- Subsequently, select the appropriate data point that you want to import (3).
- Click on “Connect” (4).

Note
The connections for the connectivity of WinCC Runtime Professional start with "Siemens OPC UA server for WinCC Runtime […]". If they are not listed in the selection list, check in the "Windows Task Manager" in “Services” whether the "OpcUaServerWinCCPro" service is executed. If required, start it.

Note
Depending on the type of OPC encryption set, several data points ("None", "Basic128Rsa15" or "Basic256") may be listed.
4.4 Importing SIMATIC Energy Suite data

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Note: Make sure to enter the same port number at &quot;Discover Url&quot; as in the OPC settings of SIMATIC WinCC Runtime Professional.</td>
</tr>
</tbody>
</table>

6. Selecting elements
- Open the "Objects > WinCC > @LOCALMACHINE:: > Archives > EnS_EnergyArchive" folder (1).
- Select the archive elements you would like to import (2).
- Confirm the selection using "OK" (3).

The wizard opens again in step 2 of 5.
### 4.4 Importing SIMATIC Energy Suite data

#### No. | Action
--- | ---
7. | Click on "Next".

**Configuration and Settings**

#### 7. Click on "Next".

**Creating data points**
- Select the archive elements that you want to create as data points (1).
- Click on "Next" (2).

#### 8. Creating data points

- Select the archive elements that you want to create as data points (1).
- Click on "Next" (2).

#### 9. Specifying interval
- Specify "15 min" for a report as "Data transmission interval" (1).
- Click on "Next" (2).
4.4 Importing SIMATIC Energy Suite data

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>Click &quot;Finish&quot; in the &quot;Communication channel overview&quot; window.</td>
</tr>
</tbody>
</table>

Result

In the tree structure in the acquisition component the "Energy_Suite" driver can now be seen. When you open it you will see all data created starting with a "d_".

Figure 4-1
4.5 Creating report

There are two options available for creating the "Report":
- Creating the report using Energy Manager PRO (see chapter 4.5.1)
- Creating the report using XML import (see chapter 4.5.2)

4.5.1 Creating a report in SIMATIC Energy Manager PRO

Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1.  | Click the "Analysis" tab in Energy Manager PRO Client (1).  
|     | Select the "Excel report" in the "Reporting" category (2). |
| 2.  | Name the report (1).  
|     | If required, adjust the "Display type" (2).  
|     | Click on "New" in "Query Types" (3). |
### 4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td><img src="image1.png" alt="Image of Report Query Type - Day dialog" /></td>
</tr>
<tr>
<td></td>
<td>• Select the query type &quot;Day&quot; (1).</td>
</tr>
<tr>
<td></td>
<td>• Select &quot;15 minutes values&quot; as compression level (2).</td>
</tr>
<tr>
<td></td>
<td>• Confirm the selection using &quot;OK&quot; (3).</td>
</tr>
</tbody>
</table>

| 4.  | ![Image of Report - Energy_Suite_Report dialog](image2.png) |
|     | • Create a second “Query type” as described in step 3 and 4 (1). Select: |
|     |   - Name: “Month” |
|     |   - Compression Level: “Daily values” |
|     | • Subsequently add a new "Modules [Parameters]" (2). |
4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 5.  | - Assign a name for the module (1).
     | - Select "Protocol" as the module type (2).
     | - Click on the "OK" button (3). |

![](image1.png)

| 6.  | Then select the interval for the query type "Day" and "Month" and the unit in "Modules [|Parameters]|". |
|     | - **Query Type:** Day Month |
|     | - **Interval:** 15 1 |
|     | - **Unit:** min d |

![](image2.png)
4 Configuration and Settings
4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>• In the next step click &quot;Import&quot; in &quot;Template&quot; (1).&lt;br&gt;• Browse to the storage location of the template and select it (2).&lt;br&gt;• Open the template (3).</td>
</tr>
</tbody>
</table>

Microsoft Excel opens with the report.

| 8.  | Close the report again and save the changes of the report in the database. |

| 9.  | Then click the "Generate Entry Points" button. |

The report reopens in Microsoft Excel.

| 10. | Go to the "EnMPro" spreadsheet. |
### 4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>

#### Note

Make sure that cell B14 also has the name of the module "Measurement_compare_modul" after inserting it.

#### Note

Make sure not to delete the demo data, this is important so that the chart does not lose its connections to "EnMPro". If you deleted the data this may have the result that the time axis shows the wrong time stamp, in this case you have to reload the report template (see step 7 – 13).

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>Close the report again and save the changes of the report in the database.</td>
</tr>
</tbody>
</table>
### 4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.</td>
<td>Subsequently click “OK” in the report menu.</td>
</tr>
<tr>
<td>14.</td>
<td>The report was now created in the tree structure of Energy Manager PRO.</td>
</tr>
</tbody>
</table>
Creating MEVA for the report calculation

Since a module of the "Protocol" type was selected for the report, it is necessary to preprocess the data point via a MEVA (measurement variable) first.

The table below shows you how to create a MEVA.

Table 4-2

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1. | - First you navigate to the module of the created report in the tree structure.  
    - Next, select the "Insert MEVA" icon in "Processing" in the "Allocation" category. |
| 2. | - Name the MEVA according to the name of one of the data points that you would like to use for the report (1).  
    - Select "Sum real" as function type (2).  
    - Select the appropriate "Unit" (3).  
    - Confirm the entries using "OK" (4). |

A MEVA can now be found underneath the module in the tree structure.
4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Next, copy the desired data point underneath the MEVA.</td>
</tr>
</tbody>
</table>
| 6.  | Repeat step 1-5 for all data points you want to use in this report.  
**Note** Please note that you enter a maximum of 10 data points in the report template used, in order to be able to design the report in a clear way. |
| 7.  | The report is readily created in Energy Manager PRO.|

**Note** How to open a report or how to process it further can be found in the manual “SIMATIC Energy Manager PRO V7.0 – Operation” in the chapter “Analysis”: [https://support.industry.siemens.com/cs/ww/en/view/109742442/82778996235](https://support.industry.siemens.com/cs/ww/en/view/109742442/82778996235)
4.5 Creating report

4.5.2 Creating a report via XML import

As a second option you can create a report by importing a XML file.

The following table shows you the required configuration steps.

Table 4-3

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1.  | • Click the "Administration" tab in Energy Manager PRO Client (1).  
• Select the "Import" function in the "Import and Export" category (2). |
|     | The wizard for importing opens. |
| 2.  | • Click on "Browse..." (1).  
• Select the XML file to be imported and open it (2).  
• Click on "Next" (3). |
| 3.  | • Select which part from the XML file you would like to import (1).  
• Click on "Next" (2). |
4.5 Creating report

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
</table>
| 4. | • Select the place where you want to import the report (1).  
    • Click on "Next" (2). |

5. Click on "Finish".

6. Repeat step 1-5 from Table 4.2 "Creating MEVA for report calculation" for all the data points you would like to use in this report.

**Note**
Please note that you enter a maximum of 10 data points in the report template used, in order to be able to design the report in a clear way.

7. The report is readily created in Energy Manager PRO.
4 Configuration and Settings

4.5 Creating report

Result

After successfully creating the report using the XML file, the tree structure of your project looks as follows:

Figure 4-2
4.6 Creating the report

Once you have created the report and provided it with the appropriate data points, you can evaluate the report accordingly.

**Table 4-4**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1.  | - Right-click the report you want to evaluate (1).  
    - Select the "Start..." item in the context menu (2). |
| 2.  | - Select the "Query Type" (1).  
    - Select a start date (2).  
    - Click on "Next" (3). |
3. **Click on "Start" to generate the report.**

The report is generated and a progress bar appears. Once all data points have been collected, the report is opened and stored in the folder structure.

### Result

The report generated was stored in the "Query type" selected in the folder structure.
5 Description of the Example Report

The report template consists of two spreadsheets:

- EnMPRO
- Chart

EnMPRO spreadsheet

The "EnMPRO" spreadsheet is used for data storage of the individual measured values and can be used for plausibility checks. Other functions are not stored.

Chart spreadsheet

The "Chart" spreadsheet evaluates the measured values graphically. The following overview shows the basic function of the report.

Figure 5-1

Table 5-1

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Table view of the data</td>
</tr>
<tr>
<td></td>
<td>Note For each data point that is assigned to the report (see &quot;Creating Meva for the report calculation&quot;) a data series is created. A maximum of 10 data points are possible.</td>
</tr>
<tr>
<td>2</td>
<td>Data point navigation to select and display individual data points.</td>
</tr>
<tr>
<td></td>
<td>Note If you click outside of the data point navigation, the chart is reset to the total view.</td>
</tr>
<tr>
<td>3</td>
<td>Colored mark of the 5 largest and 5 smallest measured values</td>
</tr>
<tr>
<td>4</td>
<td>Table view of the 5 largest and 5 smallest measured values including appropriate time stamp</td>
</tr>
</tbody>
</table>
6 Links & Literature

Table 6-1

<table>
<thead>
<tr>
<th>Topic</th>
<th></th>
</tr>
</thead>
</table>
| 1. | Siemens Industry Online Support  
https://support.industry.siemens.com |
| 2. | Download page of the entry  
| 3. | Manual "SIMATIC Energy Manager PRO V7.0 – Acquisition"  
| 4. | Manual "SIMATIC Energy Manager PRO V7.0 – Operation"  
| 5. | Manual "SIMATIC Energy Manager PRO V7.0 – Installation"  
| | Manual "Energy Manager PRO V7 – System Manual"  

7 History

Table 7-1

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1.0</td>
<td>09/2017</td>
<td>First version</td>
</tr>
</tbody>
</table>